Listing of Claims:

1. (Currently amended) ~~A method and composition of surface plasmon resonance enhanced multiband absorption and multiband fluorescence for optochemical sensing and molecular identification comprises:~~

~~a) A molecule, electromagnetic radiation and a metal nanoparticle interacting on each other causing enhanced multiband absorption and multiband emission of the molecule,~~

~~b) An analyte chemically or physically interacting with the molecule in the presence of the metal nanoparticle, wherein said the analyte modifies multiband absorption and multiband emission properties of the molecule,~~

~~c) A spacer to control distance between the molecule and the metal nanoparticle to optimize multiband absorption and multiband emission from the molecule,~~

~~e) A sensor for optochemical sensing of analytes by surface plasmon resonance enhanced multiband absorption and multiband emission of the molecule,~~

~~f) An electromagnetic radiation source or chemical source for excitation the molecule and the metal nanoparticle.~~

A composition for plasmon-enhanced multiband optochemical sensing or molecular identification comprising a molecule, a metal nanoparticle and a plasmon energy source.

2. (Currently amended) The ~~method~~ composition of claim 1, wherein the molecule

~~comprises~~ is an organic molecule, an inorganic molecule, a biomolecule or a microbe.

3- 4. (Cancelled)

5. (Currently amended) The ~~method~~ composition of claim 1, wherein the composition further comprising a spacer placed between the molecule and the metal nanoparticle and the spacer is selected from the group consisting of: a biorecognitive spacer, a dielectric spacer, a chemical link spacer, an analyte sensitive spacer or a polymer spacer.

6. (Currently amended) The ~~method~~ composition of claim 1, wherein the metal nanoparticle is a ~~metal,~~ conducting material, a super conducting material or a semi conducting material.

7 –11. (Cancelled)

12. (Currently amended) A method ~~of claims 1,~~ for plasmon-enhanced multiband optochemical sensing or molecular identification ~~of the multiband absorption and multiband fluorescence of the molecule, said method~~ comprising the steps of: (a) positioning the nanoparticle and the molecule at a distance apart sufficient to manipulate the multiband absorption or the multiband emission ~~fluorescence from~~ of the molecule; (b) exposing the ~~molecule~~ nanoparticle to energy of the plasmon source ~~exciting radiation in the single-photon and multi-photons modes of excitation~~; and (c) analyzing the multiband absorption ~~and~~ or the multiband emission ~~fluorescence from~~ of the molecule.

13. (Currently amended) The ~~method~~ composition of claims 1, wherein the ~~sensor~~ composition is a microarray, a bio-chip, a flow cell, an endoscope, a microscopic slide, a total internal reflection cell, a catheter, an optical fiber or a waveguide.

14 –16. (Cancelled)

17. (Currently amended) The method of claim 12 ~~15, and 16~~, wherein the analyzing of the multiband absorption or the multiband emission of the molecule is performed by at least one of the following techniques: absorption, fluorescence, hyperspectral imaging, Raman scattering, microscopy or microscopy imaging. ~~low excited state and higher excited states absorption and fluorescence bands of the molecule comprises analyses of absorption spectra, fluorescence intensity, fluorescence polarization, fluorescence spectra, hyperspectral imaging, fluorescence lifetime, enhanced Raman scattering, one-photon and multi-photon microscopy, one-photon and multi-photon spectroscopy, fluorescence recovery after photobleaching, fluorescence immunoassay, fluorescence resonance energy transfer~~.

18 – 19. (Cancelled)

20. (Currently amended) A method of claim ~~1 and~~ 12, wherein the distance of the nanoparticle to the molecule is additionally controlled by the spacer placed between the nanoparticle and the molecule. ~~for optical sensing with multiband emission and multiband absorption of the molecule wherein the analyte sensitive spacer modifies multiband emission and multiband absorption of the molecule.~~